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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,760	09/23/2003	James A. Mott	200209662-1	2551

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EXAMINER

HSIEH, SHIH WEN

ART UNIT PAPER NUMBER

2861

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/668,760

Applicant(s)

MOTT ET AL.

Examiner

Shih-wen Hsieh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.  
4a) Of the above claim(s) 28-58 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-19 and 21-27 is/are rejected.  
7) ☒ Claim(s) 20 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9-23-03.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species I in the reply filed on Sept. 20, 2006 is acknowledged.
2. Claims 28-58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on Sept. 20, 2006.

### ***Claim Objections***

3. Claims 8, 16 and 17 are objected to because of the following informalities:

In regard to:

Claims

These claims recite: "wherein the length of the capillary passageway is oriented along an axis that is substantially parallel to the direction of wipe". This recitation can be found in page 7, lines 1-3, and fig. 2A. Examiner's question is: "the length of the capillary passageway (250 or 252)" is in a vertical direction. This direction is perpendicular to the direction of wiping, which is indicated by arrows 230 and 260. Then when the recitation says: "wherein the length of the capillary passageway is oriented

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along an axis that is substantially parallel to the direction of wipe", this axis along which the capillary passageway is oriented is to be interpreted as an axis also running vertically. If the interpretation is correct, then said axis is orthogonal to the direction of wiping, not substantially parallel to the direction of wipe. Unless, said axis is an axis, which goes horizontally across the capillary passageway, or in the direction of wipe.

Nevertheless, Examiner considers said axis as an axis goes horizontally across the capillary passageway. Please advise.

Claim 17:

Lines 25 and 26, please change "the first tip" and "the second tip" into "a first tip" and "a second tip" to correct a minor lack of antecedent basis problem.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa JP403215043A).

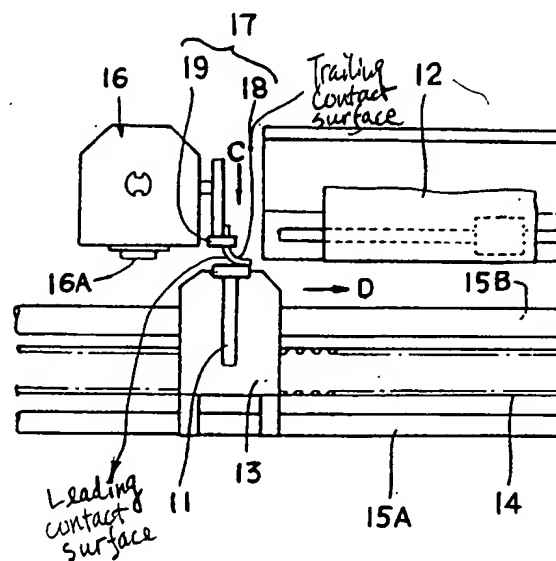
In regard to:

Claim 1:

A wiper apparatus comprising:

a wiper (18, figs. 1-5) having a leading contact surface and a trailing contact surface, the leading contact surface leads the trailing contact surface in a direction of wipe (indicated by arrow D in fig. 5) during wiping, refer to fig. 5 below for the leading contact surface and a trailing contact surface, and the direction of wiping; and

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a capillary passageway (22, fig. 1, Miyagawa called it a slit, a slit a merely a narrow passageway having the function of channeling liquid or having a capillary character) in the wiper sized to allow capillary flow of a liquid along the capillary passageway by capillary forces, refer to page 5, lines 5-14 and page 7, lines 6-9.

Claim 2:

Miyagawa further teaches:

wherein the capillary passageway has a length (L, fig .1) and a width (w or W, fig. 1), the length extending at least partially between the leading contact surface and the trailing contact surface and is greater than the width, refer to fig. 1 for L is greater than the width.

Claim 3:

Miyagawa further teaches:

wherein the length of the capillary passageway is at least four times greater than the width of the capillary passageway, refer to fig. 1, L is more than 4 times greater than w; and page 6, the bottom line to page 7, line 2.

Claim 4:

Miyagawa further teaches:

wherein the capillary passageway has a width that is about 0.5 millimeters or less, refer to page 7, lines 1-2.

Claim 5:

Miyagawa further teaches:

wherein the capillary passageway intersects at least one of the leading contact surface and the trailing contact surface, refer to fig. 1, the slit 22 is really a cutting along the blade of the wiper 18. This cutting means intersecting the faces of the blade, these face are the leading contact surface and the trailing contact surface.

Claim 6:

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The wiper apparatus of claim 1 wherein the capillary passageway intersects the leading contact surface and the trailing contact surface.

Rejection:

This claim is rejected on the basis as set forth for claim 5 discussed above.

Claim 7:

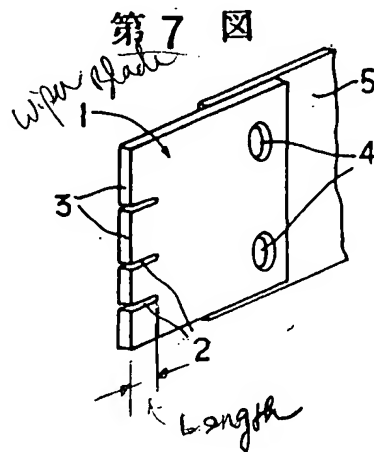
Miyagawa further teaches:

wherein the capillary passageway has a constant width, refer to fig. 7, in which, numeral 3 stands for slit, which has the same function as that of numeral 22 in fig. 1, also refer to page 3, lines 24-35.

Claim 8:

Miyagawa further teaches:

wherein the length of the capillary passageway is oriented along an axis that is substantially parallel to the direction of wipe, refer to fig. 7 below.



Claim 9:

Miyagawa further teaches:

A printer device comprising:

a print head (11, fig. 5) having an nozzle plate (the article where the wiper 18 contact with); Note: the followings are the same as those in claim 1, and are rejected on the basis as et forth for claim 1 discussed above:

a wiper apparatus comprising:

a wiper oriented to wipe the nozzle plate of the print head, the wiper having a leading contact surface and a trailing contact surface, the leading contact surface leads the trailing contact surface in a direction of wipe during wiping; and

a capillary passageway formed in the wiper, sized to allow capillary flow of a liquid along the capillary passageway by capillary forces.

Claim 10:

The printer device of claim 9 wherein the capillary passageway has a length and a width, the length extending at least partially between the leading contact surface and the trailing contact surface and is greater than the width.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above.

Claim 11:

The printer device of claim 10 wherein the length of the capillary passageway is at least four times greater than the width of the capillary passageway.

Rejection:

This claim is rejected on the basis as set forth for claim 3 discussed above.

Claim 12:



The printer device of claim 9 wherein the capillary passageway has a width that is about 0.5 millimeters or less.

Rejection:

This claim is rejected on the basis as set forth for claim 4 discussed above.

Claim 13:

The printer device of claim 9 wherein the capillary passageway intersects at least one of the leading contact surface and the trailing contact surface.

Rejection:

This claim is rejected on the basis as set forth for claim 5 discussed above.

Claim 14:

The printer device of claim 9 wherein the capillary passageway intersects the leading contact surface and the trailing contact surface.

Rejection:

This claim is rejected on the basis as set forth for claim 6 discussed above.

Claim 15:

The wiper apparatus of claim 9 wherein the capillary passageway has a constant width.

Rejection:

This claim is rejected on the basis as set forth for claim 7 discussed above.

Claim 16:

The printer device of claim 9 wherein the length of the capillary passageway is oriented along an axis that is substantially parallel to the direction of wipe.

Rejection:

This claim is rejected on the basis as set forth for claim 8 discussed above.

6. Claims 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Morikoshi (JP 406071904A).

In regard to:

Claim 21:

Morikoshi teaches in his figs. 1 and 3:

A printer device comprising:

a print head (1, fig. 1) that dispenses a first ink (yellow, Y) and a second ink (magenta, M) through a nozzle plate (4, fig. 1), the second ink having a different composition than the first ink, refer to [0024], and for the ink composition, the compositions for yellow ink are inherently different from that in the magenta ink, e.g., the dyes are different;

a wiper (8) for wiping the nozzle plate of the print head, refer to [0025]; and

a means (9) for substantially preventing mixing of the first ink and the second ink on the nozzle plate during wiping, refer to [0017] and [0020].

Claim 22:

Morikoshi further teaches:

wherein the means for substantially preventing mixing of the first ink and the second ink on the nozzle plate draws the first ink and the second ink away from the nozzle plate, refer to [0018] to [0020].

Claim 23:

Morikoshi further teaches:

wherein the means for substantially preventing mixing of the first ink and the second ink on the nozzle plate is a capillary passageway on the wiper, refer to fig. 3, in which, the cuttings (9) can be considered as slits as that in Miyagawa's reference, and either a cutting or a slit is a very narrow passage that can constitute a capillary action, please refer to [0025], lines 11-21.

Claim 24:

Morikoshi further teaches:

wherein:

the nozzle plate has a first nozzle array (such as 3-Y, fig. 1) to dispense the first ink (yellow, Y) and a second nozzle array (such as 3-M, fig. 1) to dispense the second ink (magenta, M), refer to fig. 1;

the means for substantially preventing mixing of the first ink and the second ink on the nozzle plate during wiping causes capillary flow of the first ink and the second ink between the first nozzle array and the second nozzle array, refer to [0025].  
Note: in [0025], if the cutting (9) is positioned against nozzle row 3, the meniscus of the ink in nozzle 2 will be destroyed. That means the cutting has the function of capillary action. Therefore, if the cutting (9) is positioned as shown in fig. 1, then the cutting will draw ink adhere onto the nozzle face into the cutting (9).

Claim 25:

A method for cleaning a print head comprising:

placing a wiper in contact with the print head having a nozzle plate that dispenses a first ink and a second ink, the second ink having a different composition than the first ink;

moving the wiper relative to the nozzle plate in a first direction of wipe; and  
drawing, by capillary action, the first ink and the second ink into a capillary passageway of the wiper.

Rejection:

This method claim corresponds to apparatus claims 21 and 23, and the method steps in claim 25 are deemed to be made inherent by the functions of the structure in the combination discussed above.

Claim 26:

The method of claim 25 further comprising:

moving a first tip of the wiper across a first nozzle array of the nozzle plate;  
moving a second tip of the wiper across a second nozzle array of the nozzle plate; and

moving the capillary passageway along the nozzle plate between the first nozzle array and the second nozzle array.

Rejection:

Refer to fig. 1 and [0025].

Claim 27:

Morikoshi further teaches:

moving the wiper relative to the nozzle plate in a second direction of wipe, that is opposite the first direction of wipe, refer to fig. 6 (a) and 6(b) for different direction.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa in view of Morikoshi (JP 406071904A).

In regard to:

Claim 17:

The device of Miyagawa DIFFERS from claim 17 in that it does not teach:

the print head contains a first ink and a second ink;

the nozzle plate has a first nozzle array to dispense the first ink and a second nozzle array to dispense the second ink; and

the wiper is positioned such that, during wiping, the first tip of the wiper comes into contact with the first nozzle array and the second tip of the wiper comes into contact with the second nozzle array.

Multiple heads with different color of ink, and multiple wipers each wipes its corresponding head is a well known feature in the art. To this end, e.g., Morikoshi teaches in his fig. 1:

. yellow ink (Y) and magenta ink (M), can be considered as corresponding the first and second ink;

. 3-Y and 3-M nozzle arrays; and

. wiper (8) is divided by cuttings (9, figs. 1 and 3, which corresponds to the slit in Miyagawa's reference) to have at least two portions, each one of which is responsible to wipe their own head, i.e., the very left portion of the wiper (8) wipes nozzle array (3-Y), and the portion immediate next to this far left portion wipes nozzle array (3-M), refer to page 16/35 [0025].

Therefore it would have been obvious matter that in a multiple heads and multiple wiper situation as taught by Morikoshi, the tips (i.e., the front ends, which abut the nozzle array) of each portion of the wiper (8) will wipe their own nozzle array so as to avoid mixing of colors.

Claim 18:

The printer device of claim 17 wherein the composition of the first ink is different than the composition of the second ink.

Rejection:

The composition of a yellow ink is obviously different from that in a magenta ink.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa.

The device of Miyagawa DIFFERS from claim 19 in that it does not teach:  
a second wiper oriented substantially parallel to the wiper, the second wiper having a second leading contact surface and a second trailing contact surface; and  
the second wiper having a second capillary passageway formed in the second wiper and having a second length that extends at least partially between the second leading contact surface and the second trailing contact surface, and a second width that is less than the second length.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to put another wiper having the same configuration as that of the wiper (18), since it has been held that mere duplication of the essential working parts of a device, and in this case, the wiper (18), involves only routine skill in the art, refer to MPEP 2144.04 VI B.

***Allowable Subject Matter***

10. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claim 20 is the inclusion of the limitations of the wiper and second wiper are positioned relative to the nozzle plate of the print head such that, during wiping, the first tip of the wiper and the third tip of the second wiper come into contact with the first nozzle array, the second tip of the wiper and the fourth tip of the second wiper come into contact with the second nozzle array, and the capillary passageway of the wiper and the second capillary passageway of the second wiper pass between the first nozzle array and the second nozzle array during wiping. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

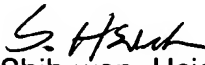
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, V. Patel can be reached on 571-272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 **SHIH-WEN HSIEH**  
**PRIMARY EXAMINER**  
Shih-wen Hsieh  
Primary Examiner  
Art Unit 2861

SWH



Oct. 3, 2006